CLAIMS

What is claimed is:

1. An ultrasonic probe for ablating a biological material comprising:

a proximal end, a distal end and a longitudinal length therebetween;

a material of low radiopacity extending from the proximal end toward the distal end; and

a material of high radiopacity engaged to the material of low radiopacity,

wherein a transverse ultrasonic vibration of the ultrasonic probe causes a biological material ablating effect along at least a portion of the longitudinal axis of the ultrasonic probe including the material of high radiopacity.

2. The ultrasonic probe of claim 1 wherein the material of high radiopacity is located at a distal end of the ultrasonic probe.

3. The ultrasonic probe of claim 1 wherein the material of high radiopacity is on an outside surface of the longitudinal length of the ultrasonic probe.

4. The ultrasonic probe of claim 1 wherein the material of high radiopacity engages the material of low radiopacity by a process of butt-welding.

5. The ultrasonic probe of claim 1 wherein the material of high radiopacity engages the material of low radiopacity by a process of brazing.

6. The ultrasonic probe of claim 1 wherein the material of high radiopacity engages the material of low radiopacity by a process of shrink fitting.

7. The ultrasonic probe of claim 1 wherein the material of high radiopacity engages the material of low radiopacity by a process of lap welding.

8. The ultrasonic probe of claim 1 wherein the material of high radiopacity engages the material of low radiopacity by a process of threaded fitting.

9. The ultrasonic probe of claim 1 wherein the material of high radiopacity engages the material of low radiopacity by a process of twisting the materials.

10. The ultrasonic probe of claim 1 wherein the material of high radiopacity engages the material of low radiopacity by a mechanical connection.

11. The ultrasonic probe of claim 1 wherein the material of high radiopacity engages the material of low radiopacity by a metallurgical connection.

12. The ultrasonic probe of claim 1 wherein the material of high radiopacity comprises tantalum.

13. The ultrasonic probe of claim 1 wherein the material of high radiopacity comprises a tantalum alloy.

14. The ultrasonic probe of claim 1 wherein the material of high radiopacity is selected from the group consisting of tantalum, tungsten, gold, molybdenum and alloys thereof.

15. The ultrasonic probe of claim 1 wherein the material of high radiopacity maintains a diameter of the ultrasonic probe.

16. An ultrasonic probe for destroying a biological material comprising:

a proximal end, a distal end and a longitudinal axis therebetween; and

a composite section having a material of low radiopacity surrounded by a material of high radiopacity,

wherein a transverse ultrasonic vibration of the ultrasonic probe produces cavitation in a medium surrounding the ultrasonic probe to destroy the biological material along a portion of the longitudinal axis of the ultrasonic probe including the composite section.

17. The ultrasonic probe of claim 16 wherein the composite section is an entire length of the ultrasonic probe.

18. The ultrasonic probe of claim 16 wherein the material of high radiopacity does not increase a diameter of the ultrasonic probe.

19. The ultrasonic probe of claim 16 wherein the material of high radiopacity comprises tantalum.

20. The ultrasonic probe of claim 16 wherein the material of high radiopacity comprises a tantalum alloy.

21. The ultrasonic probe of claim 16 wherein the material of high radiopacity is selected from the group consisting of tantalum, tungsten, gold, molybdenum and alloys thereof.

22. A method of improving the visibility of an ultrasonic probe for ablating a biological material comprising:

providing an ultrasonic probe composed of a material of low radiopacity;

engaging a material of high radiopacity to the material of low radiopacity at an at least one predetermined location of the ultrasonic probe; and

adapting the ultrasonic probe such that the material of high radiopacity supports a transverse ultrasonic vibration to ablate the biological material along at least a portion of a longitudinal axis of the ultrasonic probe including the material of high radiopacity.

23. The method of claim 22 further comprising engaging the material of high radiopacity to the material of low radiopacity at a distal end of the ultrasonic probe.

24. The method of claim 22 further comprising butt-welding the material of high radiopacity to the material of low radiopacity.

25. The method of claim 22 further comprising brazing the material of high radiopacity to the material of low radiopacity.

26. The method of claim 22 further comprising shrink fitting the material of high radiopacity to the material of low radiopacity.

27. The method of claim 22 further comprising lap welding the material of high radiopacity to the material of low radiopacity.

28. The method of claim 22 further comprising threaded fitting the material of high radiopacity to the material of low radiopacity.

29. The method of claim 22 further comprising twisting the material of high radiopacity to the material of low radiopacity.

30. The method of claim 22 further comprising mechanically connecting the material of high radiopacity to the material of low radiopacity.

31. The method of claim 22 further comprising metallurgically connecting the material of high radiopacity to the material of low radiopacity.

32. The method of claim 22 wherein the material of high radiopacity comprises tantalum.

33. The method of claim 22 wherein the material of high radiopacity comprises a tantalum alloy.

34. A method for increasing the visibility of an ultrasonic probe inserted into a body comprising:

providing a material of low radiopacity;

welding a material of high radiopacity to the material of low radiopacity to form an ultrasonic probe;

inserting the ultrasonic probe into the body; and

vibrating the material of low radiopacity and the material of high radiopacity to treat a biological material along at least a portion of a longitudinal axis of the ultrasonic probe.

35. The method of claim 34 further comprising butt-welding the material of high radiopacity to the material of low radiopacity at a distal end of the ultrasonic probe.

36. The method of claim 34 wherein the ultrasonic probe comprises a proximal end, a distal end and the longitudinal axis between the proximal end and the distal end.

37. The method of claim 34 further comprising generating a transverse ultrasonic vibration to produce cavitation in a medium surrounding the ultrasonic probe to treat the biological material along the portion of the longitudinal axis of the ultrasonic probe.

38. The method of claim 34 further comprising producing a plurality of nodes and a plurality of anti-nodes along at least the portion of the longitudinal axis of the ultrasonic probe.

39. The method of claim 34 wherein the material of high radiopacity comprises tantalum.

40. The method of claim 34 wherein the material of high radiopacity comprises a tantalum alloy.